

Don't be  
**TAKEN** for a ride  
Guide to  
**Auto Repair**



New Jersey Division of Consumer Affairs  
124 Halsey Street  
P.O. Box 45025  
Newark, NJ 0710  
E-mail: [askconsumeraffairs@lps.state.nj.us](mailto:askconsumeraffairs@lps.state.nj.us)  
Web site: [www.njconsumeraffairs.gov](http://www.njconsumeraffairs.gov)

©2005 Published by The New Jersey Division of Consumer Affairs  
with a Grant from Midas International.

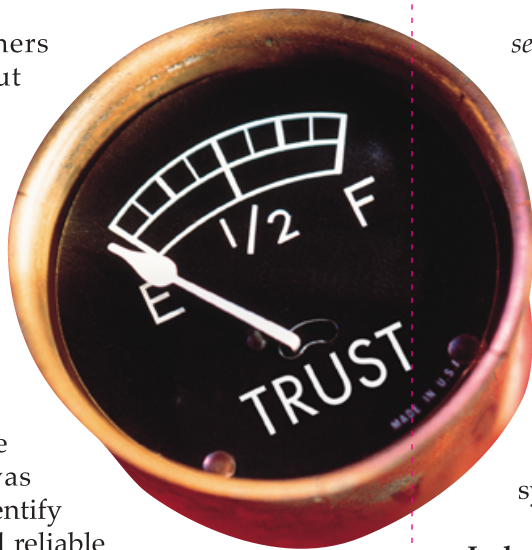
Don't be  
**TAKEN** for a ride  
Guide to  
**Auto Repair**



800-242-5846 • [www.NJConsumerAffairs.gov](http://www.NJConsumerAffairs.gov)  
Office of the Attorney General



New Jersey consumers complain more about transactions involving their cars than they do about anything else. About a fourth of all the complaints the Division of Consumer Affairs receives each year is car related. About half of these deal with repairs. Our "Don't Be taken for a Ride Guide to Auto Repair" was prepared to help you identify reputable repair shops and reliable mechanics. This guide also provides you with an overview of New Jersey's lemon laws for new and used cars. There is no guarantee against fraud, but this guide will help you protect yourself from being "taken for a ride" when you take your car to the shop.



## How to Choose the Right Repair Shop

Today's cars are more computerized than the Apollo 11 spaceship was. Electronic controls monitor everything from road-sensing systems to engine performance to anti-lock brakes. Cars run more economically and are safer, but repairing them is not as simple as it used to be. That is why choosing the right repair shop is more important than ever before.

### What you should do:

- Ask friends and neighbors for suggestions. If your friends know a shop that is honest and reasonably priced, their experiences are worth drawing from. It is important to be prepared and select a reputable repair shop before you are faced with an emergency situation.
- Check to see if the shop is accredited by the Motorist Assurance Program (MAP). MAP is an industry-sponsored organization that has established Uniform Inspection and Communication Standards for inspecting vehicles and recommending repairs, as well as standards of service for proper treatment of customers.
- Make sure the shop has a variety of service equipment, tools,



service manuals, and technical bulletins so mechanics have access to the information and computer equipment needed to repair your vehicle properly.

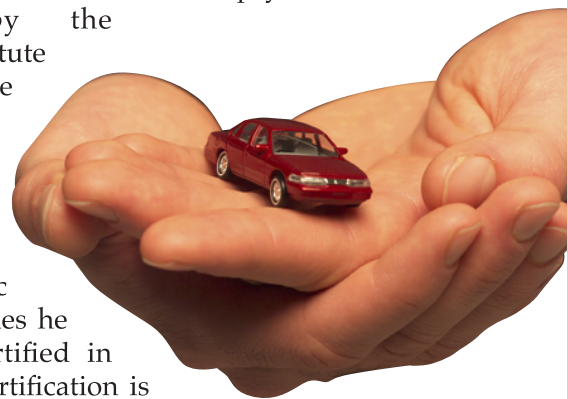
## What Types of Repair Shops Are There?

- **New car dealerships** are where you should go for service on components under manufacturer's warranty.
- **Specialty shops** are often franchised operations which provide repairs and replacements of items such as: brakes, exhaust systems, tires, transmissions or engines.
- **Independent repair shops** are usually owned locally and may provide a full range of auto services or specialize in routine maintenance repairs like oil changes, belts, batteries, etc. They often are one-shop operations.
- **Mass merchandisers** often specialize in high-volume repairs such as brakes, batteries, tires, etc.
- **Service stations** offer routine maintenance, such as oil changes and replacement of filters and belts. Over the past two decades, the full-service bays in gas stations have frequently been replaced by convenient food markets or fast food outlets.

## What Your Mechanic Should Know

It is important that you trust the mechanic who works on your car.

Ask if the mechanics in the shop you select are certified by the National Institute of Automotive Service Excellence (ASE). Also, ask your mechanic what specialties he or she is certified in and if that certification is current. Mechanics can be certified in brakes, heating and air conditioning, engine service, suspension and steering



and electrical work /electronic systems.

The mechanic should conduct a thorough inspection of your vehicle's condition and discuss his or her findings with you so you can make an informed decision.

There are two categories of repair:

- **Required** because the part in question is no longer providing the function for which it is intended, does not meet a design specification or is missing.
- **Suggested** because the part is near the end of its life, for preventive maintenance or for performance improvement.

In addition to technical expertise, it is important to be able to communicate with the mechanic in terms you can understand. If you don't understand a term he or she uses or have any questions, don't be afraid to ask for clarification. You are paying for a service and it is important you understand exactly what is being done and why. To help you we have included a glossary of terms on pages 7 and 8.

## What Kinds of Questions Should I Ask?

Auto repair is much like an "operation" in the medical field. You have the right to know what will be done, what is being done and what was done.

- Ask the mechanic to road test your vehicle before and after service, unless there is a safety issue such as no braking power.

Go along on the test rides, so you can describe symptoms and confirm repairs.

- Ask for a copy of the inspection report and a thorough, written estimate showing a break-out of costs for each component and labor segment. The state's Consumer Fraud Act requires mechanics to provide you with a written estimate. Any changes to that

estimate must be approved by you prior to the work being done.

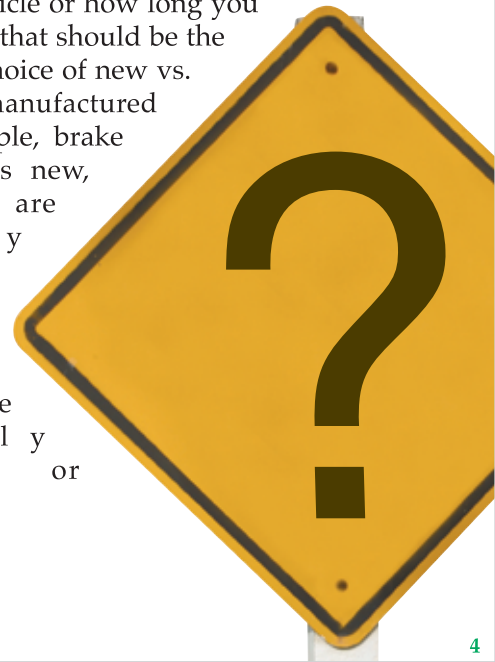
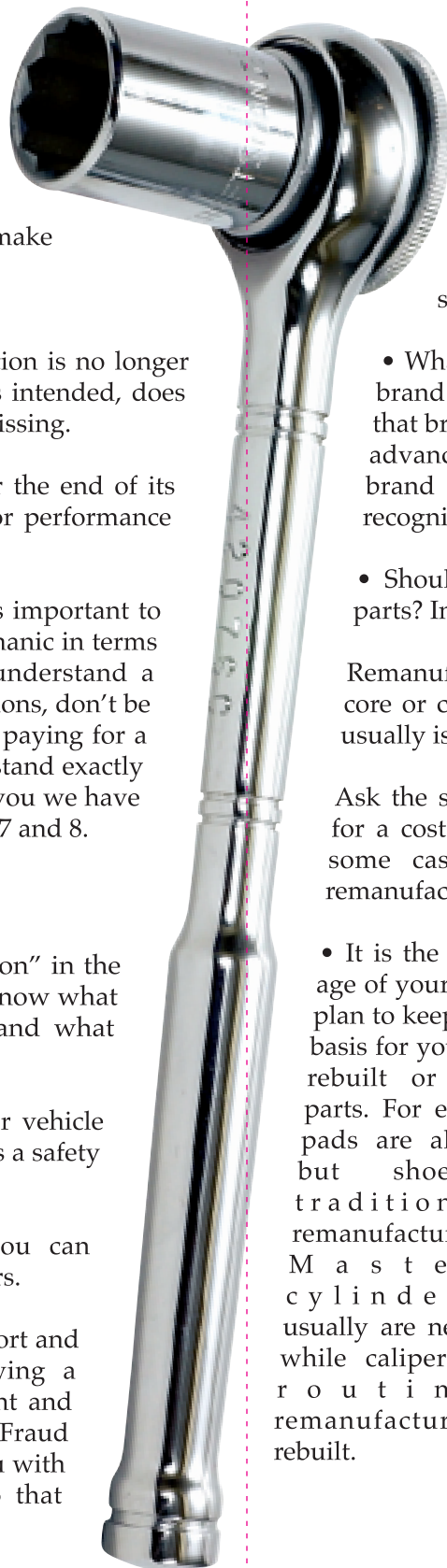
- Ask about warranties. What is included - parts, labor? What is the time period the warranty is in effect? Is the warranty good anywhere in the United States or must you return to the shop where the work was performed?

- What brand of parts is being used? Visiting a brand name retailer is not always a guarantee that brand name parts are being installed. Ask in advance and, if you prefer the known quality of brand name parts, insist on brand names you recognize.
- Should I buy new, rebuilt or remanufactured parts? In fact, what do these terms mean?

Remanufacturing normally means sending a part's core or case off-site to be reprocessed. Rebuilding usually is an in-shop process.

Ask the shop for its definition of these terms and for a cost estimate based on each type of part. In some cases, new parts are not available, so remanufactured or rebuilt parts must be used.

- It is the part to be replaced—not the age of your vehicle or how long you plan to keep it— that should be the basis for your choice of new vs. rebuilt or remanufactured parts. For example, brake pads are always new, but shoes are traditionally remanufactured. Master cylinders usually are new, while calipers are routinely remanufactured or rebuilt.



# What if I have problems in the future?

If you have a problem and believe that your vehicle has not been serviced properly, go back to the shop where the work was performed and discuss your concerns with the owner or manager.

The shop depends on satisfied customers for repeat business and referrals, and its owner or manager should be happy to listen to your concerns and help you resolve your problems.

If you can't resolve your problem, you may try to work through a corporate structure if the shop is part of a chain. You may also consult with your county or local office of Consumer Affairs, or seek the help of the New Jersey Division of Consumer Affairs by writing to us at P.O. Box 45025, Newark, NJ 07101; calling us at 1-800-242-5846 or contacting us via e-mail at: [askconsumeraffairs@lps.state.nj.us](mailto:askconsumeraffairs@lps.state.nj.us)

PREVENTIVE MAINTENANCE CHECKLIST					
Vehicle system or part	Check weekly	Check monthly	Check every 2 months	Special note	
Air Filter			✓		Inspect and replace when dirty.
Antifreeze	✓				Cooling systems typically contain a mixture of 50% antifreeze and 50% water.
Battery				✓	Check with every oil change.
Belts		✓			Inspect for slack between pulleys.
Brake Fluid		✓			Check for copper content.
Engine Oil				✓	Check level every other fuel fill up - change every 3 months or 3,000 miles.
Exhaust				✓	Have emissions checked yearly.
Hoses		✓			Inspect for softness or bulges.
Lights				✓	Keep spare bulbs and fuses in vehicle.
Oil Filter				✓	Replace with every oil change.
Power Steering Fluid		✓			Add approved type when needed.
Shock Absorbers				✓	Replace when worn or leaking.
Tires		✓			Inflate to recommended pressure level.
Transmission Fluid		✓			Check with engine running - add approved type when needed.
Washer Fluid				✓	Check every other fill up.
Wiper Blades				✓	Replace yearly or when smearing or chattering.

Note: Also refer to vehicle's manual.



# DEFINITIONS OF COMMON COMPONENTS OF YOUR VEHICLE

## Brake terms

**ABS** - Anti-Lock Braking System. An advanced computerized braking system which can detect and prevent the wheels from locking up and skidding during hard stops or stops on low traction surfaces.

**Caliper** - A hydraulic clamp which, when the brake pedal is applied, clamps the brake pads on a rotating metal disk attached to the wheel. This slows the wheel rotation to slow or stop the car.

**Disc** - Also known as a brake rotor. Is attached to the wheel and rotates with it. Is clamped by the brake caliper mentioned above.

**Drum** - Similar in function to a disc. Is attached to the wheel and rotates with it. Is slowed when brake shoes are forced to rub on its inner surface by the action of the wheel cylinder.

**Shoes and Pads** - Also known as friction material. These are the temperature- and wear-resistant parts that rub on the rotating rotor or drum, causing it to slow.

**Wheel Cylinder** - The device in a drum brake that expands and pushes the shoes against the rotating drum.

**Master cylinder** - The device connected to the brake pedal that changes the mechanical motion of the brake pedal into hydraulic pressure used to apply the brakes.

**Hydraulic system** - The braking system uses hydraulic fluid to transmit the force of the brake pedal to the wheels to activate the brakes.

**Brake hardware** - Various pins, springs and other pieces that attach the shoes, pads and calipers to the vehicle. These are designed to allow movement of the parts while holding them in position.

## Suspension

**Shocks absorbers** - Hydraulic "damper" devices that operate by forcing hydraulic fluid through valves to control the movement of the suspension as the vehicle travels over bumps in the road.

**Strut** - Specialized type of shock absorbers that also are a structural part of the suspension system. Typically found in the front suspensions of front-wheel-drive cars.

**Springs** - Devices that carry the weight of the vehicle and allow the suspension to move up and down independent of the vehicle's body over highway bumps. The three main types are coil springs, leaf springs, and torsion bars.

## Exhaust system

**Muffler** - An exhaust system component made up of a series of baffles designed to reduce the engine noise.

**Catalytic converter** - Device to reduce the pollutants leaving the engine before the exhaust exits into the air. A catalyst is a substance that promotes a chemical reaction without being consumed by the reaction.

**Exhaust manifold** - Attached to the engine to collect the exhaust from each cylinder and direct it to the exhaust pipe.

**Exhaust pipe** - The pipe that routes the exhaust from the engine through the converter and muffler.

**Oxygen sensor (O2S)** - A device in the exhaust stream that detects the amount of oxygen present in the exhaust. This information is used by the fuel management computer to adjust the fuel delivery to the engine.

## Steering system

**Tie rods** - These are steering linkages attached between the steering gearbox or rack and pinion assembly and the wheels. They transfer the motion of the steering wheel to the wheels.

**Ball joints** - A device constructed of a ball and socket that attach the wheel to the suspension while allowing the wheel to turn and move up and down.

**Rack and pinion** - A type of steering system where the rotation of the steering wheel turns a round pinion gear that is meshed with a rod or rack with mating teeth in it. The rotation of the pinion causes the rack to move back and forth. This back and forth movement is transferred to the wheels by the tie rods to steer the wheels.

**CV joints** - Constant Velocity joints are a swivel type joint on the end of the drive shaft to transfer the engine power to the wheels while allowing the wheels to steer and move up and down.

**CV boots** - Rubber accordion-like coverings that keep grease in the CV joint and to keep the dirt and road grime out. They have to be flexible to allow the joint to swivel.

**Control arms** - These are suspension components that attach the top and bottom of the wheel to the car with ball joints. They hold the wheel in position while it moves up and down.

## Air conditioning

**Evaporator** - A device with tubes and fins to remove heat from the passenger compartment using the same principle that cools your skin when air evaporates the water after you are wet.

**Condenser** - A device much like an evaporator where the outside air picks up the heat from the refrigerant, causing it to condense back into a liquid.

**Compressor** - A component that compresses the evaporated refrigerant to raise its boiling point so it can condense in the condenser at outside air temperatures.

**Orifice tube** - A restriction in the refrigerant hose causing a pressure drop which lowers the boiling point so the refrigerant can evaporate in the evaporator.

**Refrigerant** - R-12 (common trade name: Freon) and R-134a are chemicals that have ideal properties to evaporate and condense in an automotive air conditioning system. R-12 is known to be an ozone depleting substance, so it has been replaced in newer cars with R-134a, which does not deplete ozone. Most vehicles can be retrofitted to use R-134a.

**O-rings** - Round rubber band like devices used to seal hoses and plugs.

## Engine and electrical systems

**Fuel injection** - A fuel delivery system where fuel is squirted into the engine in precisely metered amounts. This is usually controlled electronically.

**Carburetor** - A device in which air moves through a venturi, similar to an airplane wing, to draw fuel into the engine. These were not accurate enough to meet current emissions standards and have been replaced with fuel injection.

**Alternator** - Driven by the engine, an alternator generates electricity to run the engine, accessories, lights, and to charge the battery.

**Battery** - Stores electricity to start the car and to be used as a back up if the alternator fails.

**Ignition coil** - A step up transformer that changes the 12 volts from the alternator into 40,000 volts or more needed to spark across the spark plug gap and ignite the fuel in the engine.

**Radiator** - A component made of tubes and fins used to transfer the heat produced in the engine to the air. A mixture of water and ethylene glycol, known as coolant, circulates in the engine to pick up heat and move the heat to the radiator where it transfers it to the air.

**Water pump** - The water pump circulates the coolant in the engine and radiator.

**Thermostat** - A part in the cooling system to regulate the coolant flow from the engine to the radiator to maintain a constant engine operating temperature.

**Tune-up** - Routine maintenance such as replacement of spark plugs and adjustments of various engine components. Because of the wide range of requirements depending on the age of the vehicle, it is best to follow the maintenance schedule in the vehicle's owner's manual. Many more adjustments are needed in older model cars.

## New Jersey's Lemon Laws

There are some cars which no one can fix, even the most talented mechanics. Think of these vehicles as “lemons.”

As a New Jersey consumer, no one should be stuck with a lemon or taken for a ride when he or she buys a new or a used car. Hopefully, the following guide will help you steer clear of these road hazards. If you have any questions, please call the Lemon Law Unit at **973-504-6226**.

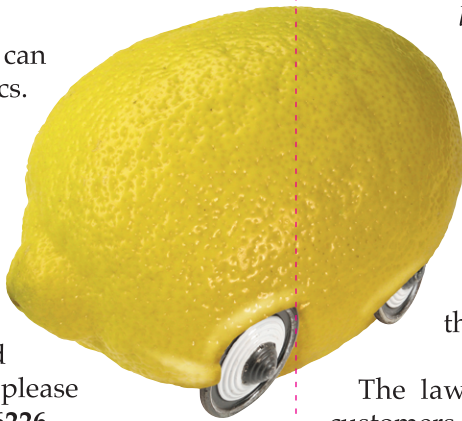
### New Cars

What happens if that brand new car or motorcycle you bought turns out to be a lemon? Under the New Jersey New Car Lemon Law (N.J.S.A. 56:12-29 to 49) you may be entitled to reimbursement or a new vehicle.

The law covers anyone who buys, leases, or registers a new car or motorcycle in New Jersey by requiring the manufacturer to correct the defects that are originally covered under the manufacturer's warranty and are identified and reported within 18,000 miles or two years, whichever comes first. To qualify under the New Car Lemon Law, the defect must substantially impair the use, value or safety of your vehicle.

#### Before applying to the Lemon Law Unit for assistance you must:

- Give the manufacturer three attempts to repair or correct the defect, or your car must be out of service for a total of 20 cumulative days while the dealer is trying to fix it.
- After 2 repair attempts, notify the manufacturer, in writing (certified mail, return receipt requested) of its final chance to repair the defect. Notification must take place before 18,000 miles or two years, whichever comes first.
- If the problem still exists after contacting the manufacturer, call the Lemon Law Unit at 973-504-6226 to receive an application for a Lemon Law Dispute Resolution hearing through the Office of Administrative Law. Complete the application and return it with a copy of all supporting documents, the final repair opportunity



letter, the certified mail return receipt, repair orders, vehicle registration, sales contract, lease agreement and finance agreement. The Lemon Law Unit will review your application to determine if you qualify and notification will be sent to you.

### Used Cars

The New Jersey Used Car Lemon Law (N.J.S.A. 56:8-67 et seq.) provides protection to those who have purchased used cars.

The law requires used car dealers to provide their customers with warranties. The length of the warranty depends on the car's mileage. If the car has:

- 24,000 miles or less: the warranty must be for a minimum of 90 days or 3,000 miles, whichever comes first;
- more than 24,000 miles, but less than 60,000: the warranty must be for a minimum of 60 days or 2,000 miles, whichever comes first;
- between 60,000 miles and 100,000 miles: the warranty must be for a minimum of 30 days or 1,000 miles, whichever comes first.

**The law does not apply to:** cars with more than 100,000 miles, private sales, used cars costing less than \$3,000, used cars more than seven model years old, or used cars that have been declared a total loss by an insurance company.

You are responsible for bringing the car to the dealer and may be entitled to a refund or the used car's full purchase price if:

- the dealer has been unsuccessful at fixing the same material defect after at least three attempts; or
- if the car has been out of service for 20 cumulative days while the dealer is attempting to fix it.

If, during the warranty period, the used car fails to operate properly through no fault of yours and the dealer has had a reasonable opportunity to repair the car and refuses to replace or refund the full purchase price, then you may be eligible for assistance under the Used Car Lemon Law.

